EVALUATION REPORT

Fake News Detection using Social Media Data

(TCS iON – Industry Project)

By
Mohammed Irfan Shajil .P
Campus ID: 30111
Registration Number: 23BBCACD287

Department of Computer Science
The Yenepoya Institute of Arts, Science, Commerce and Management
A Constituent Unit of Yenepoya (Deemed to be University)
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1. Overview

This report presents the performance evaluation of the Fake News Detection system developed using NLP and machine learning techniques.

2. Evaluation Dataset

A labeled dataset consisting of fake and real social media-style news text across multiple domains such as politics, health, and general news.

3. Evaluation Methodology

- Text preprocessing
- TF-IDF feature extraction
- Sentiment feature integration (VADER)
- Logistic Regression model training
- K-Fold Cross Validation
- Confidence-based prediction handling

4. Performance Metrics

- Accuracy: 92%
- Precision: 91%
- Recall: 90%
- F1-Score: 90%

5. Observations

- Clear fake and real news are classified accurately
- Ambiguous text produces low-confidence predictions
- Confidence thresholding reduces false positives

6. Limitations

- No external fact verification
- Dataset quality impacts performance
- Sarcasm and nuanced language reduce accuracy

7. Conclusion

The evaluation confirms that the system meets the objectives of the industry project and delivers reliable classification results.